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ABSTRACT

A study examined the operations and management of the National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE) and developed information to assist in the design of an evaluative study of the network's impact on users of its services. (Since its inception in 1972, the NNCCVTE has provided a mechanism for state and local education agencies to coordinate curriculum activities and to share curriculum resources.) It was concluded that the original objectives of the network have remained largely unchanged since the program's inception. State liaison representatives are the primary users of the network's services. The six NNCCVTE centers each provide a variety of services in three broad areas: capacity building, information resources, and outreach activities. In recent years, the NNCCVTE has invested considerable resources in developing electronic communication systems such as the Vocational Education Curriculum Materials System (VECM). In addition, individual centers have developed linkages with a number of other vocational education information-sharing organizations and, overall, the network maintains close ties with the National Center for Research in Vocational Education. The individual centers have not developed uniform guidelines for evaluating the quality of curricula and do not routinely screen curricula; however, they have contributed to a general improvement in the quality of available vocational education curricula and have been active in reducing duplication and in disseminating newly developed materials. Recommendations were developed concerning the design of an NNCCVTE user study. (Profiles of the six regional NNCCVTE centers are appended.) (MN)

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OPERATIONS AND MANAGEMENT OF THE NATIONAL NETWORK FOR CURRICULUM COORDINATION IN VOCATIONAL AND TECHNICAL EDUCATION

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Technical monitor for this report was Ms. Dorothy Shuler, U.S. Department of Education.

**OPERATIONS AND MANAGEMENT
OF THE
NATIONAL NETWORK FOR CURRICULUM COORDINATION IN
VOCATIONAL AND TECHNICAL EDUCATION**

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TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
Study Purposes and Approach	2
Overview of the Program	4
Organization of the Report	7
II. THE EVOLUTION OF THE PROGRAM	8
The Creation of the Network	8
The Evolution of the Network from 1973 to 1984	13
III. MANAGEMENT AND OPERATIONS OF THE NETWORK	18
Services and Activities of the Network	18
Federal Program Administration	30
Role of the Directors' Council	35
The State Liaison Representatives	36
Linkages	40
IV. DESIGN OF A USER SURVEY	46
Factors Influencing the Network's Impact	47
Strategies for Assessing the Network's Impact	50
Summary	53

APPENDIX

CHAPTER ONE

INTRODUCTION

Since its inception in 1972, the National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE) has provided a mechanism for state and local education agencies to coordinate curriculum activities and to share curriculum resources. Structurally, the Network consists of (1) six regional Curriculum Coordination Centers (CCCs) funded under contract with the U.S. Department of Education (ED) Office of Vocational and Adult Education (OVAE); (2) a seven-member Directors' Council comprising the six Center Directors and one representative of the Department of Education who serves as an ex-officio member; and (3) 57 State Liaison Representatives (SLRs) appointed by the State Directors of Vocational Education and supported with state funds. The annual federal investment in the Network has ranged from approximately \$300,000 to \$775,000, with funding remaining fairly constant at around \$775,000 in the last few years. The Network has no separate congressional authorization but is funded under the provisions of the Programs of National Significance (Subpart 2, Part B of the Vocational Education Amendments of 1963, as amended), which authorizes federal discretionary funds for extending and improving vocational education. This report presents findings from a brief study designed to describe the operations and management of the CCCs and to recommend a method of evaluating their effectiveness.

Summarized briefly, the principal findings of this study are:

- The original objectives of the Network have remained largely unchanged since the program's inception, although activities pursued to address those objectives have varied widely.
- SLRs are primary users of Network services, serving as the main state-level contact point for the flow of information to states and to the Network.
- The six Centers provide a variety of services to their clients in three broad categories: capacity building, information resources, and outreach activities.
- In recent years the Network has invested considerable resources in development of the automated Vocational Education Curriculum Materials System (VECM) as well as in other electronic communication systems.
- The individual Centers have developed linkages with a number of other vocational education information-sharing organizations and the Network overall maintains close ties with the National Center for Research in Vocational Education.
- The Centers do not routinely screen curriculum; nor have they developed uniform guidelines for evaluating the quality of curriculum. At the same time, the Network's activities in reducing duplication and disseminating new developments are reported to have contributed to a general improvement in the quality of available vocational education curriculum.

This chapter of the report includes two sections: (1) a description of the purposes and approaches of this investigation; and (2) a brief overview of the program.

Study Purposes and Approach

This study was undertaken at the request of ED's Office of Planning, Budget, and Evaluation (OPBE). The principal objectives of the study, as defined by OPBE, were (1) to describe the

operations and management of the Curriculum Coordination Centers and (2) to develop information to assist in the design of an evaluative study of the Centers' impact on users of their services. Information obtained through this study and the projected user study is intended to assist the planning and budgetary deliberations of ED.

In order to accomplish these study purposes, the Education Analysis Center for State and Local Grants has collected information from documents pertaining to the Network and from interviews and on-site observations. The documents reviewed by study staff include relevant statutes, budgetary documents, Requests for Proposals for operation of the Centers, the proposals submitted by each Center, annual Center performance and impact reports, NNCCVTE Annual and Anniversary Reports, brochures and communiques produced by the Centers, and articles and studies reporting on Center and Network activities. The study team interviewed present and former staff of OVAE, OPBE officials, and others knowledgeable about the activities and accomplishments of the Centers. These interviews were supplemented with visits to three of the six Centers and to the annual NNCCVTE Concurrent Meeting attended by Center Directors and State Liaison Representatives. Each of the six Center Directors was interviewed, as well as some 20 SLRs and the staff of the three Centers that were visited.

The study team then analyzed all information collected from the document reviews, interviews, and on-site observations in order to develop a comprehensive description of (1) the goals, activities, services, and management of the Centers and (2) their

linkages with other components of the Network and other components of the vocational education research, curriculum development, and program improvement systems. The information that was collected and analyzed was also used in designing the projected evaluative study, discussed in a later section of this report.

Overview of the Program

The network of Centers and SLRs was created on the premise that "the curriculum is central to educational effectiveness and that through improved curriculum management major educational breakthroughs can be achieved."^{1/} The program's creators believed that improvements in the management of curriculum required that (1) a system for assessing curriculum needs and reporting those needs to curriculum developers be created and maintained; (2) guidelines for developing curriculum be established; (3) mechanisms for disseminating curriculum materials and information be built; and (4) activities in curriculum development, dissemination, and utilization be coordinated with the aim of avoiding unwarranted duplication, increasing the transportability of materials, and improving the acceptance and use of curriculum materials. The function of the Centers is not to develop curriculum, but rather to assist in improving the management of curriculum through the services they provide state and local clients in their regions, including teachers, administrators,

^{1/} Robert M. Worthington, "Mobilizing the Support of Key Persons or How to Work With Your State Director," Occasional Paper No. 1, NNCCVTE, May 1981, p. 2.

curriculum developers, dissemination specialists, state vocational education area supervisors, etc. Although the services actually offered by each Center may vary depending on regional needs, most Centers:

- Assist in identifying regional curriculum needs
- Locate sites for field testing newly developed curricula
- Acquire and disseminate, primarily through the SLRs in their regions, curriculum information
- Maintain a library of curriculum information and materials from all over the country
- Perform searches in response to requests for materials and information
- Provide curriculum in-service training or technical assistance
- Prepare Regional Communiques for distribution throughout the region
- Maintain linkages with other related organizations, associations, and systems
- Collect data and place abstracts of curricula and other instructional materials in a national automated searchable data base--the Vocational Education Curriculum Materials (VECM) System

Each of the six Curriculum Coordination Centers serves a region of the country. The regions and states served, as well as the organization operating each Center, are as follows:

- | | | |
|---------------------|---|---|
| 1. Northeast Region | Connecticut, Maine,
Massachusetts, New
Hampshire, New Jersey,
New York, Puerto Rico,
Rhode Island, Vermont,
Virgin Islands | New Jersey
State Department of
Education,
Old Bridge, NJ |
|---------------------|---|---|

- | | | |
|------------------------|--|---|
| 2. Southeast Region | Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee | Mississippi State University, Starkville, MS |
| 3. Midwest Region | Arkansas, Iowa, Kansas, Louisiana, Missouri, Nebraska, New Mexico, Oklahoma, Texas | Oklahoma State Department of Vocational and Technical Education, Stillwater, OK |
| 4. East Central Region | Delaware, District of Columbia, Illinois, Indiana, Maryland, Michigan, Minnesota, Ohio, Pennsylvania, Virginia, West Virginia, Wisconsin | Illinois State Board of Education, Springfield, IL |
| 5. Northwestern Region | Alaska, Colorado, Idaho, Montana, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming | Commission for Vocational Education, Olympia, WA |
| 6. Western Region | American Samoa, Arizona, California, Commonwealth of the Northern Marianas, Guam, Hawaii, Nevada, Trust Territory of the Pacific Islands | University of Hawaii, Honolulu, HI |

Each Center operates under a three-year contract administered by the Program Improvement Systems Branch of OVAE. The total amount the Department contracted for this purpose for all six Centers during fiscal 1984 was \$773,494. Individual Center budgets ranged from around \$90,000 to nearly \$175,000. According to OVAE officials, the variation in Center funding levels results in part from variability in the amount of funds available at the time of each competition. In years when funds are lower, RFPs typically delete technical assistance and one or more regional

meetings from the work scope. An additional factor that influences funding levels is relative travel costs for SLR travel to regional and annual meetings. Federal funds are augmented by state and local resources. In particular, the SLRs--who act as the Center's access point to each state, assist state and local users in obtaining Center services, and ensure that curriculum materials received at the state level are disseminated throughout the state--are funded out of state vocational education budgets.

Organization of the Report

Subsequent chapters of this report analyze in more detail the history, operations, and management of the Network and recommend a strategy for evaluating the program's effectiveness. Chapter Two presents an historical overview of the Network that analyzes the genesis and evolution of the program. Chapter Three describes in detail the management and operation of each component of the Network, including the roles and responsibilities of the six Centers, OVAE, the Directors' Council, and the SLRs. Chapter Four presents the study team's recommended design of a user study, which will permit the investigation of the impacts of Center services and activities. Finally, an Appendix contains profiles of the individual Centers.

CHAPTER TWO

THE EVOLUTION OF THE PROGRAM

Among the topics investigated during the study were the rationale for the Network's establishment and its development over time. Information on the Network's creation and development reported in this chapter is intended to provide a context for analysis of the Network's current operations and design of a user study.

The Creation of the Network

The concept on which the National Network is based is that of improving vocational education by improving the curriculum information and materials available to instructors. A principal architect of the Network and an advocate of this concept has been Dr. Robert M. Worthington, who served in the late 1960s as New Jersey State Director of Vocational Education and then became Associate U.S. Commissioner of Education and Director of the Bureau of Adult, Vocational and Technical Education. As Dr. Elizabeth J. Simpson, who worked under Dr. Worthington in the Bureau, explained:

Our belief was that there are three strategies for improving the vocational education program: improve curriculum, improve teacher education, and improve research in vocational education. There are those who do not believe that curriculum development and management are central to educational effectiveness, but that was the basis for the Network strategy.*

* Telephone interview with Elizabeth J. Simpson, August 22, 1984.

Part I of the 1968 Amendments to the Vocational Education Act provided the statutory basis for the Network by authorizing the Office of Education to support curriculum development and related activities as part of a broader federal research and development strategy. In 1970, Congress appropriated the first funds for Part I, and later that year a National Curriculum Management Center was established to administer those funds within the Bureau of Adult Vocational and Technical Education under the leadership of Dr. Simpson.

At about the same time the Bureau funded a national study of the vocational education curriculum laboratories that had been established in some states. Although the curriculum laboratories differed from one state to another, the study found that in general they performed three principal functions: (1) development, diffusion, and dissemination of curricula within the state; (2) coordination of curriculum efforts with developments in educational technology and systems of delivery and administration; and (3) inservice training for educational personnel in adapting and using curriculum materials.^{1/} In short, these laboratories functioned as the principal curriculum development and management units within their states. In the early 1970s, however, many states had no labs, and the labs that existed were in no way coordinated. Dr. Worthington called the first meeting of representatives from the existing laboratories in 1971.

^{1/} Elizabeth J. Simpson, "A National Network for Curriculum Coordination: Tying Up the Pieces," American Vocational Journal 48 (October 1973), p. 22. Much of the history presented in this section is taken from this article.

As a basis for decisionmaking about federal activities in curriculum development, Dr. Simpson and her staff identified the following national problems in curriculum development and management:

- Although much curriculum work was being performed across the country by various agencies, including the curriculum laboratories, there was little coordination to ensure that efforts were not duplicative and that all aspects of vocational education were being attended to.
- The quality of the curricula being developed varied greatly, in part because so little attention had been focused either on the process of curriculum development or on the development of standards by which curricula could be judged.
- Much of the curricula being developed was not being validated through rigorous testing.
- Less attention was focused on the dissemination of curricula than on its development so that much of the new curricula was not being used.
- Curriculum courses for prospective teachers rarely addressed the problems of curriculum management or taught teachers how to select and adapt curriculum materials already available.^{2/}

Dr. Simpson and Dr. Worthington agreed that the National Center for Curriculum Management should identify promising solutions to these problems. As Dr. Simpson said in a recent interview, the Network idea was born out of the search for a way to ensure that curriculum dollars were not being wasted, that efforts were not duplicative, and that curriculum materials of high quality were accessible in all states. For the sake of efficiency and long-term program survival, Dr. Worthington and Dr. Simpson sought to develop a program that would use existing

^{2/} Summarized from a list provided in Worthington, p. 2.

resources and agencies and would require only minimal federal investment. They never envisioned creating new federally funded regional curriculum laboratories. Instead, they believed the necessary talents and energies could be tapped more efficiently by encouraging existing state centers to bring proximate states together to share information and plans.

Thus, in 1971 Dr. Simpson's National Curriculum Management Center established a discretionary grant program to assist states in improving the capabilities of state curriculum laboratories to operate as curriculum management centers. Awards were made to five state laboratories: California, Illinois, Kentucky, Mississippi, and Oklahoma. The original directors of the projects worked to develop and extend the concepts and goals of the fledgling program. Not only did the grantees direct their efforts toward improving curriculum management within their own states, but they also began to meet and correspond with neighboring states.^{3/} Early on, it became apparent that if Center Directors were to maintain relationships with states in their regions, they would need a liaison in each state. Thus, as Center Directors began discussing the emerging network concept with State Directors of Vocational Education, they began asking the State Directors to appoint State Liaison Representatives. By July 1973 the original Directors had succeeded in having SLRs appointed in the 33 states in their regions.

^{3/} Simpson, p. 23.

Because eleven states in the East and six in the Northwest had no funded Center nearby, the Bureau invited these states to submit proposals for Centers. Grants were awarded to curriculum laboratories in New Jersey and the state of Washington.

The Directors of the original five funded laboratories maintained close working relationships as they proceeded with their efforts, sharing information and ideas through correspondence and at regularly scheduled meetings. In July 1973, at their third meeting, they and the directors of the two new Centers completed plans for the formal creation of a national network. Attendees at that meeting established a Curriculum Coordination Council (now referred to as the Directors' Council), composed of Office of Education curriculum staff and the Directors of the seven Centers, to carry out plans for the network and to evaluate its progress.

The five major purposes of the Network, as set forth in 1973, are as follows:

- To provide a mechanism for the sharing of information on curriculum materials available and under development
- To develop and recommend guidelines for curricula and curriculum development with the ultimate goal of increasing the effectiveness of curriculum materials and enhancing their transportability
- To establish and maintain a system for determining curriculum needs in vocational-technical education and reporting conclusions to the field
- To coordinate activities in curriculum development, dissemination, and utilization with the aim of avoiding unwarranted duplication, enhancing quality of effort, increasing the transportability of curriculum materials, and improving the acceptance and use of curriculum materials

- To report these curriculum coordination efforts to the field.^{4/}

Thus, by July 1973 a national network had been put in place through the concerted efforts of the Bureau staff and the original grantees. As Dr. Simpson wrote in an article published later that year:

The need for coordination of vocational education curriculum development and management at the national level has long been recognized. Lack of massive resources for responding to this need was held to be an insurmountable obstacle. Now a mechanism appears to be in place for achieving the desired coordination at a level of funding which, if not ideal, is realistic.^{5/}

The Evolution of the Network from 1973 to 1984

Since the formal creation of the Network in 1973, the program has been characterized by remarkable stability and continuity. Although each Center has developed in response to the particular needs of the region in which it is located and the particular strengths of the sponsoring organization and the Center Director, the broad objectives and general structure of the Network remain the same. Moreover, five of the original seven grantee organizations still operate Centers, and some SLRs have been with the program from its inception.

The program has, of course, experienced some changes, however modest. In 1974, the number of Centers was reduced from seven to six, and the regional boundaries were redrawn to conform

^{4/} Ibid., p. 23.

^{5/} Ibid., p. 35.

to Office of Education regions--decisions that were not viewed favorably in the field at that time. The only other significant organizational change came in 1977 when the Western Region's Center moved from California to Hawaii. With that change came an increase in the number of states and territories served by the Center.

The importance of and attention paid to the SLRs has increased substantially over time. As the Center Directors began to realize just how important the SLRs were to the accomplishment of Center objectives, they placed more and more focus on their cultivation and development. In 1974 the Network began sponsoring an annual Concurrent Meeting attended by all Center Directors and all SLRs at federal expense. As discussed in the next chapter, these meetings and other regional meetings are occasions for professional development for the SLRs.

There have also been some changes in the administration of the program at the federal level. There is no longer an identifiable National Curriculum Management Center reporting directly to OVAE's administrator. In recent years the program has not had the visibility and attention of the early years, and although funding has not decreased, neither has it grown. The funding vehicle for the Center was changed in 1975 from grants to contracts, a change that imposed increased accountability and paperwork requirements on the Centers. Both as a group and individually, the Center Directors have played a predominant role in setting direction for the Network--a fact that some of those interviewed consider to be a unique strength of the program and

an important key to its success. On the other hand, many of these same observers believe that the program's lack of visibility in OVAE has also made it vulnerable. Because the program has no specific Congressional authorization, its continued existence depends to a great extent on the attention afforded it by the OVAE leadership.

The program's creators intended for the Network to encourage sharing of curriculum resources among the states and to improve the management of curriculum in each region. While focusing on the attainment of these objectives, Center activities have also yielded several important byproducts. The professional development of the SLRs and their achievements in particular states is one such outcome. A second is that Center Directors have often acted to promote federal priorities in vocational education in their regions. The Directors have come to represent a personal link between federal administrators and the 57 states and territories. For instance, one Center Director explained to the study team:

Because of the federal funds I receive, I believe that I have a responsibility to both build a curriculum network in my region and to be responsive to federal vocational education priorities. The federal government cannot implement its priorities without state commitment to those priorities. Because of my position in the vocational technical education community in the region, I can facilitate that state commitment. I do it by conducting workshops, serving on other committees, disseminating federal products, and maintaining communication with state directors. In addition, I can also report problems back to the federal government. This helps them establish new priorities.

The Network has also functioned as a mechanism for other federally funded projects to disseminate their products. For instance, the Network serves a dissemination function for the National Center for Research in Vocational Education (NCRVE), authorized by the Education Amendments of 1976.

Reportedly, Network activities have influenced the creation of other consortia of states and have encouraged the establishment of new state curriculum laboratories. For instance, as a result of associations made through the Network, in 1975 the states served by the Midwest Center formed the Mid-America Vocational Curriculum Consortium (MAVCC) to develop curricula. When the Network was created only 14 states had curriculum laboratories; today some 40 states operate curriculum labs--a growth that some attribute in part to the sharing of ideas through Network activities.

Finally, the Network's Directors' Council initiated the idea for the Vocational Education Curriculum Materials (VECM) system, an instructional materials data base. The Centers collect abstracts of curriculum materials from SLRs for inclusion in the VECM system, which is maintained by NCRVE.

Thus, as the Centers and SLRs have evolved into an integrated network for curriculum coordination and dissemination, the system has influenced vocational education in a variety of ways, not all of which were necessarily foreseen by the program's creators. Any evaluation of the Network must assess these potentially powerful influences of the Network. The design recommended in Chapter Four is specifically intended to capture

the unexpected outcomes, as well as those that were more predictable. The next chapter focuses more closely on the operations and management of the Network.

CHAPTER THREE

MANAGEMENT AND OPERATIONS OF THE NETWORK

Information collected on the management and operations of the Network focused on the various components that constitute the program. In this chapter our findings are presented on the activities and services of the six regional Centers, the federal administration of the program, the role of the Directors' Council, the role of the SLRs in Network operations, and linkages between the Centers and other organizations whose activities include sharing of information on vocational education.

Services and Activities of the Network

With minor variations in wording across the three Requests for Proposals under which the six Curriculum Coordination Centers operate, the federally specified objectives of the Centers are as follows:

- A. To increase the availability of curriculum information and materials to instructional program improvement personnel;
- B. To promote the adoption and adaptation of curriculum materials developed with Federal, State, and local funds in order to minimize duplication;
- C. To improve the quality of vocational education curriculum and dissemination services provided to public, private, and proprietary schools; and
- D. To establish linkages with other organizations or information-sharing systems in the vocational education community. (RFP 84-007, p. 3)

According to OVAE officials interviewed during this study, the responsibilities of the Centers in implementing these objectives are specified in the task lists contained in the RFPs. Within these constraints, the Centers perform a variety of activities and services, and each Center has the flexibility to change over time in response to the emerging needs of its region and the field of vocational education generally. This strategy, in addition to the variation in funding levels and activities authorized under the three different RFPs as well as regional diversity, has resulted in variability across the Centers in activities and services. Given this variability, however, each of the Centers provides services in three broad categories of activity: capacity building, information resources, and outreach.

This section describes the services provided by the Network in each of these categories. Included are the broad range of services provided and specific examples of services unique to particular Centers.

Capacity building. Much of the focus of the Network and the individual Centers has been on building capacity among clients in the area of curriculum development and management. Most capacity-building services have been targeted at the state level.

Perhaps the most important aspect of the Network's capacity-building activities has been the establishment of a nationwide network of SLRs. Early in the program's history the Center Directors perceived the need for a contact point in each state who would both disseminate curriculum and instructional materials

within the state and transmit state-developed materials to the regional Center and thus into the nationwide Network. To fill this role the idea of the SLR was conceived, and the Center Directors were able to convince State Directors of Vocational Education in all of the states and territories served by the Network to appoint SLRs to fill this role. It should be noted that the SLRs are not supported out of the Centers' budgets but rather through state-controlled funds. The only aspect of SLR activities paid with Center funds is travel to regional and Concurrent Meetings. Consequently, from the perspective of the federal program, the time spent on Network activities by SLRs is essentially donated by the states.

To support the SLR system, the Network Centers perform a number of capacity-building services. Chief among these is the annual Concurrent Meeting, which brings all the SLRs together for a week that includes seminars on such topics as emerging technology and new approaches to curriculum development and dissemination, visits to exemplary vocational education institutions, and sessions on strategies for increasing the effectiveness of SLRs within their state systems. A major corollary benefit of such meetings is the opportunity for SLRs to develop contacts with their colleagues in other states. As an example, at the Concurrent Meetings curriculum-developing states display curriculum materials they have produced, and consumer states preview these new products for possible purchase. According to one of the SLRs interviewed, these displays are particularly useful for states with limited resources for development or

purchase of curriculum materials, enabling such states to make decisions concerning materials without having to expend resources unnecessarily.

In addition to Concurrent Meetings, each Center holds one or more (depending on RFP requirements) regional meetings of SLRs each year. Again, such meetings provide an opportunity for SLRs to keep abreast of curriculum and other developments within their region. Additionally, in most regions the SLRs help to set annual priorities for Center services. In the East Central region, for example, the SLRs have recommended that the Center focus on microcomputer applications in vocational education. The result of this priority was an agreement under which the Center has become the National Preview Center for Vocational Education in the Northwest Regional Educational Laboratory's MicroSIFT Network (Microcomputer Software and Information for Teachers).

Through work carried out at the regional meetings, at least two regions have established uniform formats for vocational education curriculum, a development that is viewed as increasing the transportability of curriculum among states. This initiative has contributed to the spread of competency-based approaches to curriculum in vocational education. Additionally, at the request of their SLRs, one Center is working to computerize task-list catalogs and task lists. The goal is to give states access to comprehensive, up-to-date task lists that include citations of resources to support curriculum development in various occupational areas.

In addition to the national and regional meetings, the Centers also perform other capacity-building activities. Depending on the federal support available, Centers provide technical assistance through workshops or consultations. SLRs are generally asked to submit their priorities for technical assistance annually, and the Centers then either provide assistance directly or serve as brokers in obtaining speakers or workshop presenters to meet the specified needs.

The Centers consider technical assistance important both for capacity-building and as a vehicle for "spreading the word" about the Network and its services. A problem identified by all the Center Directors interviewed during this study was the constraint on these activities due to the limits on federal funds. While states can pay for some technical assistance from the Centers, most of the states most in need of assistance have financial constraints that limit their ability to pay. According to the Director of the Midwest Center, one strategy used by all the Centers to maximize their service capability is to piggyback consultations or technical assistance visits onto other activities. For example, the Director of the Western Center generally stops off in states in his region on the way to annual meetings of the American Vocational Association or other organizations to which he belongs. This strategy is particularly important in the Western region, where travel costs would otherwise be prohibitive. Thus state and local vocational education personnel receive some services from the Network that are not provided with federal funds and that would otherwise not be available.

As the Director of the East Central Center indicated, her Center's staff and resource limitations preclude contacts with all the local vocational educators in her 12 states who might need services. The Center therefore undertakes activities that will build the states' capacity to meet the needs of teachers and administrators and then serves as a continuing resource for the state contacts. The Director related two examples of this process. The Center, along with the region's SLRs, produces state profiles that detail all the vocational education and employment training resources, staff, and students in each state. Having the SLRs collect the information for these state profiles increases their familiarity with issues and developments in vocational education, makes them more visible within the states, and increases the interchange of knowledge among the states. This process also alerts vocational educators at all levels to the existence and resources of the Network.

A second example has to do with the Centers' assistance in the establishment of state curriculum resource centers. When West Virginia and Virginia decided to establish centers, they sent staff to the East Central Center to receive training in establishment and operation of resource centers. Later, Center staff traveled to those states to assist in implementing procedures for cataloging materials, making loans, etc. When intrastate needs for materials or information exceed the state centers' capacities, the state centers can contact the regional Centers, which are able to canvass the nation through the resources of the Network to obtain what is needed.

Information resources. All of the Centers serve as sources of information on--and copies of--vocational curriculum and instructional materials. In this sense they operate like libraries, collecting, cataloging, and loaning materials. Additionally, they perform telephone, paper, and computer searches throughout the Network to respond to requests for special materials that they do not have on hand. Most Centers maintain not only print materials but also films, audiovisuals, and in some instances microfiche and software.

The Centers do not limit their services to their own regions but respond to whatever requests they receive. However, most requests from local or state personnel go through the SLRs, who channel the requests to the Center in their region. According to interviews with Directors, many states prefer this approach as a way to help them maintain control over vocational education activities within the states, and the Centers perceive the importance of respecting this view. Further, the procedure tends to make the SLRs, and by extension the Network, more visible as a resource. At the same time, many of the Centers receive requests directly from local teachers and administrators or state staff other than the SLR. (Some of the Centers have a considerable number of walk-in clients as well.) Many requests come from the states in which the Centers are located, particularly in Illinois, Oklahoma, and New Jersey, where the Centers are housed with the state curriculum resource centers.

Originally, the Network was to serve as a repository and avenue for all new curriculum materials. States were asked to

send their regional Center copies of materials as they were developed, providing sufficient quantities for dissemination to the other Centers and all SLRs. To some extent the system has operated according to this design, but in recent years the design has had to be modified. Some states found the request to supply the Network with sufficient copies for the six Centers and all 57 SLRs to be financially or logistically too burdensome. Thus they sent materials only to the Centers, which distributed preview copies as states made requests. With recent declines in resources, some states have been unable to provide any preview copies at all. Further, some of the curriculum-developing states as a matter of policy do not share materials. This is particularly true for states that sell curriculum; the number of states in this category has increased in recent years. In such cases the Centers have often purchased copies for preview by their client states. Thus the distribution process for new materials has been dictated by a combination of factors, including particularly state policy and resource constraints.

To facilitate distribution of materials, most Centers prepare catalogs or bibliographies of new materials. The Midwest Center, for example, has catalogs of materials developed by MAVCC and the Oklahoma Curriculum and Instructional Materials Center, which it distributes throughout the Network. The East Central Center prepares topical bibliographies that describe available materials, enabling clients to be more selective in their loan requests and thus increasing the Center's cost efficiency. Before making a purchase decision or undertaking development of

new materials, a client can review a bibliography in a topic such as TIG welding and then request the loan of specific materials for previewing. (The Northeast Center accomplishes the same objective through microfiche, a medium that the states in that region have found useful. However, the states in the East Central region tried microfiche and found it unacceptable; thus that Center does not use that medium.)

In recent years the Network has begun to use computer technology. Two Centers, for example, are computerizing task list catalogs that member states can access directly through the electronic bulletin board when they are making decisions concerning curriculum development, adaptation, and adoption. Other Centers are putting their holdings on line to enable clients to examine materials without waiting for loan copies. The Western Center, which is constrained by the costs of postage in covering its region, often uses PEACESAT (Pan Pacific Educational and Communications Experiments by Satellite) and the electronic mail capability of the Network. The Centers have typically provided incentives to their states to join the electronic system, in some instances offering grants for terminals and needed training and in other instances scheduling conferences to acquaint states with the system's capabilities.

Part of this automation initiative has been the implementation of the Vocational Education Curriculum Materials (VECM) system, an automated curriculum information system. Each state is encouraged to complete a target number of VECM abstracts each year in order to help build this new data base. While in earlier

years Centers performed paper searches of the Network to locate materials requested by their clients, they now use a combination of electronic mail and VECM to supplement the paper searches. Additionally, some Centers are encouraging SLRs to access VECM directly. However, many states still prefer to ask the regional Center to perform such searches, and in any case VECM has not entirely obviated the need for paper searches. One reason is that it is still under development; another reason has to do with its criteria concerning the types of materials to be entered into the data base. For example, VECM contains only completed materials, and one of the continuing services of the Network is to provide information on materials under development.

Persons interviewed during the study offered a number of examples of the utility of the Network as an information resource. For example, the SLR from Michigan commented on the value of Network services in reducing the costs of curriculum development. To establish the cost savings that a state can achieve the state kept careful records on costs for developing a data processing guide without using any existing materials and found that the guide costs around \$65,000. Subsequently, the state used materials obtained through the Network (task lists, instructional materials, etc.) in developing similar materials and were able to reduce development costs to around \$13,000 to \$14,000. According to the respondent, access to materials through the Network not only reduces development costs and time but also contributes to the quality of materials because

developers are able to screen materials for quality during the development process.

The Centers do not screen materials submitted by the states, and they do not view such screening as appropriate to their functions. They observe, too, that such a quality-control process could screen out materials that would in fact have utility in some local settings whose needs the Centers were not cognizant of. While quality control screening is thus not performed, federal officials and others familiar with the Network believe that the Network's capacity as an information resource has had an overall positive impact on the quality of vocational education curriculum. The Network's existence has meant that most of the curriculum currently available has not had to be developed in isolation, and the increasing familiarity of curriculum developers with the work of other states and local educators is thought to have had a salutary effect on overall quality in the field.

Outreach. Over the Network's history the Centers have engaged in a variety of marketing activities intended to develop a broad base of potential clients for their program-improvement services. These activities range from a Network Newsletter to monthly teleconferences with State Directors of Vocational Education within the regions. The Network typically has displays at annual professional meetings, and the Northwest Center has developed a traveling display for each SLR to use in announcing Network services at workshops and other meetings. Currently five Centers receive federal support for production of a Regional

Communique, mailed to state and local vocational educators, that includes descriptions of Center services as well as articles on current issues in vocational education. Additionally, some Centers have obtained state funding to produce brochures announcing their services, and others provide descriptive information to other organizations that may be able to use the services. Finally, distribution of materials, responses to requests, and the other services routinely provided by the Centers constitute an additional outreach mechanism, with most of the Centers including forms for clients to evaluate the quality and timeliness of services. The rationale for all these outreach activities is to make potential clients aware of the Centers' services in order to ensure broad utilization.

All of the Center Directors commented on the federal restrictions on printing as a constraint on their outreach activities. These restrictions preclude production of the National Newsletter that all viewed as an effective publicity tool. Further, the extent to which individual Centers can print materials is severely limited. Some of the Centers have alleviated this problem through use of state funds. At any rate, since print and other forms of outreach are central to the utilization of Center services, all the Centers conduct activities designed to make themselves known to their potential clients.

Federal Program Administration

The Network is administered by the Program Improvement Systems Branch, Division of Innovation and Development, OVAE, on

a contract basis. Each Center operates under a multiyear contract. The first year's performance period is competitively awarded, with the two subsequent years covered by noncompetitive continuations. The Program Improvement Systems Branch sponsors competitions for two centers annually. The Southeast and Western Curriculum Coordination Centers' contracts were last competed in 1982; the East Central and Midwest in 1983; and the Northeast and Northwestern are being competed in 1984.

The federal funding level for the six centers was \$774,000 in FY 84. Roughly half of this went into salaries and benefits of the Center staffs, with actual proportions varying across Centers. With this money the federal government purchases the management and coordination services of the project directors and the services of support staff involved in searches and referrals, VECM abstracting, cataloging, distribution of curriculum materials and preparation of communiques. In kind salary contributions vary across Centers, but they are sizable. Actual dollar equivalents for such contributions have not been reported for all six contracts, and it is not clear what proportion of these contributions may be subsumed under overhead expenses as computed by the Centers' host organizations. Bookkeeping, mail preparation, librarian services, and clerical support are among the services provided to the Network without direct charge by host states.

Of the contract costs other than salaries and indirect expenses, travel is the largest single item, accounting for between 15 and 25 percent of the total funding of individual Centers. These travel costs are used primarily for Center staff

and SLR travel to regional and concurrent meetings. Remaining direct costs vary significantly across Centers as a function of geography, differences in services the Centers provide, and the availability of funds for technical assistance.

With its federal funds, each Center is contractually bound to perform five major tasks:

- Participate as a member of the Directors' Council
- Serve as a facilitator to the consortium states in the region
- Abstract the Centers' library materials for the national computerized data base and forward updates to NCRVE
- Prepare and submit periodic progress reports to ED
- Provide annual summary impact information to ED

This basic framework has been sufficiently flexible to accommodate variations in the activities the Centers carry out. As part of the competitive procurement process, each Center proposes its own approach for accomplishing the required tasks. Some of the variations across Centers appear over time, as a result of changes in federal priorities and in the vocational education sector. The phased funding of the Centers across the three-year contract cycle permits at least some part of the Network to respond to changes each year. The three-year cycle also contributes to differences in funding levels across Centers. As federal discretionary funds increase or decrease, the level of effort prescribed for the Centers expands or contracts across cycles.

From time to time, an individual Center undertakes a special initiative of its own design. These are incorporated into a Center's work statement, generally after being brought to ED's

attention by the Directors' Council. Because special initiatives may be supported by additional federal funds above those provided for basic operations, they introduce a competitive aspect across Centers in that these initiatives must be funded within ED's yearly budget for the Centers.

Because the Centers are contractually supported, any technical changes from contract specifications must have prior approval. Changes in key personnel and reassignment of funds across budget categories are typical items submitted to the Department of Education for authorization. The intent of Centers to request such changes generally first surfaces during telephone conversations between the Center Director and Government Project Officer and is followed by appropriate paperwork submitted to the Project and Contracts Officers for formal approval.

As a federally sponsored program, the Network is directly affected by federal policies. Work statements of the Centers include implicit directives that tasks and activities are to reflect federal priorities (e.g., the East Central Center contract specifies preparation of two specialized bibliographies per year on topics of national priority) and explicitly require the Centers to conform to federal policies. The Network is part of a larger federal initiative designed to further the goals of vocational education program improvement. In addition to the Network, the Program Improvement Systems Branch sponsors the NCRVE and liaisons with state RCUs. Later in this chapter, in the section titled "Linkages," we discuss the Network's coordination with other federally supported systems.

Individually, Centers have designed and supported activities reflecting particular federal priorities. For example, in the past various Centers have elected to screen all materials for sex equity, prepare topical bibliographies on special education, and encourage development and sharing of curricula that address energy conservation issues. Because the Center Directors' advocacy for these matters is not always shared by all states in their regions, Center Director positions are sometimes pressure points for diffusion of federal interests and response to these interests. It is at this point that a balance is negotiated between federal expectations of the Network and the interests of individual states as represented by their SLRs.

One way in which federal policies decisively affect Network activities is that approval to develop and produce publications and audiovisual materials must be secured from the ED Publications and Audiovisual Advisory Committee (PAVAC). There is currently a perception throughout the Network that policies regarding printing and publication present obstacles to attainment of Network goals. Five Centers prepare a regional communique to inform prospective users about the Center, its services, and how to access them, as well as to relay information about trends in vocational education. Such publications must compete for the attention of prospective users; in the view of one director, if the communique is to serve its purpose effectively, it must both have wide distribution and be able to gain the notice of potential users. However, PAVAC has stated that publications prepared under the federal contract are not to be

typeset, are not to include pictures, and are to be printed in one color only. The number printed is not to exceed 4,000. Center personnel believe that these limitations impede their effectiveness in making their services known to the intended beneficiaries.

The fact that the Centers are supported by discretionary funds also has a role in shaping the Network. Yearly fluctuations in the amount of federal funds available contribute to differences in the scope and type of activities across Centers. In years when funds are particularly limited, such activities as technical assistance and regional meetings are often deleted from the work statement, for centers competing in those years. The variability in funding levels is not generally known to the field, and some believe that this situation can lead to critical assessments by State Directors whose states receive fewer services than those in other regions. The cyclical bidding and award process also leaves the Network open to competition across Centers.

Impact reporting. Each Center is contractually required to submit an annual report on its impact on state vocational curriculum activities. The Directors' Council has prescribed a reporting format and impact measures, specifying 32 key result areas and effectiveness indicators. These indicators include counts and measurement of events that occur at both the state and Center levels. The Council has also recommended standards for use in reporting measures of cost effectiveness; for example, a state's savings through adoption or adaptation of a curriculum

guide are estimated on the assumption that the total development cost for such a guide is \$30,000. These cost-savings standards are based on a study of costs incurred by states, MAVCC, and V-TECS. Center statistics and anecdotal information contained in the impact reports are summarized by the Project Officer for presentation in the NNCCVTE annual impact report.

Role of the Directors' Council

The Directors' Council, the Network's policymaking body, is composed of the Directors of the six regional Centers and one ex-officio representative of ED. While agreeing on the overriding goals of the national Network, Council members also represent their own agencies and thus bring differences in philosophy and priorities to the Council.

Council members convene three times each year to review new developments and determine whether new activities should be authorized. For example, among the initiatives that the Directors' Council has reviewed and authorized are the testing of microfiche by the East Central Center as an alternative to hard copy distribution of materials and a feasibility study by the Northeast Center for computerization of Network materials.

The Directors' Council also makes recommendations to ED on matters concerning national priorities and policies affecting the Centers. Support for VECM was actively discussed in this forum before ED contracted with the Centers to perform VECM-related activities.

In addition to serving as a facilitator to affect policy, the Council also provides a forum for intra-network sharing and external linkage. Innovations occurring in one region are reported to representatives of other regions. Problems are compared and possible solutions discussed. The Network is linked to other organizations having interest in vocational education program improvement through the Directors' Council; for example, the Council sends a representative to the State Directors' Program Improvement Committee.

The State Liaison Representatives

State Liaison Representatives are the Network's "linkers." As the primary point of contact for persons in their states wishing to tap Network services, they represent their states to the regional Center and the Center to their states. Appointed by State Directors of Vocational Education at the request of the regional Centers, the majority of SLRs are employees of state vocational education agencies, where they hold a variety of positions. A few are affiliated with RCUs, colleges or universities, and the occasional SLR is employed by a local school district. The time SLRs devote to the Network is donated by their employer or their state's vocational education system. The Centers' federal contracts reimburse the SLRs' directly for travel expenses.

Since Network activities are so closely related to other functions they perform, many SLRs have difficulty estimating what percent of their time is devoted to the Network. The reported

range of 5 percent to 25 percent, however, appears to provide an accurate representation of their involvement. Center directors establish expectations for the support that the SLRs will provide, but they have no leverage over these individuals. Center Directors and SLRs report that the single most critical variable affecting SLR activities is the personal commitment of the SLRs to the goals of the Network and their perceptions of benefits that active involvement will yield for them and for vocational education in their states. Another important variable is the individual's primary employment responsibilities. Observers report that the job of an SLR is facilitated if the individual is strategically placed in the state bureaucracy, preferably having a broad perspective on what is happening in the state. The organization of some states' vocational education sectors, however, precludes such placement. The state organizational orientation of an SLR can affect where the SLR places his or her emphasis as well as the breadth of the individual's own networking.

Although some SLRs have been officially involved since the program's inception, the average SLR has held this title for about two years. The Network thus has a continuing need for training new SLRs. Typically, individual Centers have developed their own approaches for bringing new SLRs along. These approaches primarily involve contact with other SLRs and Center Directors at regional meetings, as well as task lists and other materials developed to remind both new and old SLRs of their responsibilities. Additionally, in recent years an SLR training

session, using competency-based approaches, has been held on the day before the Annual Concurrent Meeting.

Exactly what an SLR does appears to vary as much as the amount of time individuals spend on Network activities. However, despite the variation arising from regional, state, and individual factors, a common set of responsibilities and activities can be identified. We discuss first how the SLRs offer Network services within their states, then what they contribute to the Network.

SLRs are the contact point when requests originate in their states for Center services such as computer searches and technical assistance. SLRs who have facilitated their states' going "on-line" for computer searches report less dependence on the regional Centers for this service, and instead often fill the requests themselves. In regions where technical assistance is still available under the Center's federal contract, the SLRs develop plans for technical assistance based on needs within their states, and they broker the Center's provision of this assistance. Thus funds available for technical assistance are allocated based on specific needs identified by SLRs as the Centers develop service plans each year.

Through regional and concurrent meetings SLRs are exposed to emerging trends in other states, new technologies in information diffusion, and a national perspective on vocational education curriculum management. They can expand their own contacts and share organizational experience, problems, and solutions with others having responsibilities similar to their own. It then

falls to them to carry their expanded knowledge back to their states, to utilize new-found resources and broker new ideas, and to continue to "sell" the Network concept to the State Directors and other officials. As one SLR noted, "The return is directly related to the effort."

For the Network, SLRs serve as liaisons to their states by keeping informed of curriculum development activities, research needs, and resources and staying abreast of state policies and priorities pertaining to vocational education. The Centers depend on the SLRs to gather information relative to their own states' curriculum development activities and needs and to relay this information upward. An SLR's utility to the Network is thus affected by his or her effectiveness as an intrastate liaison. Center directors report actively fostering the SLRs' skill in liaison activities by working with them individually and in regional and concurrent meetings.

Centers also depend on their SLRs for other information-gathering functions. SLRs provide information for regional communiques, data for preparation of the Center's annual impact reports to ED, and formal reports on state activities at regional meetings.

The Network depends on SLRs to secure copies of materials developed in their states for inclusion in Center libraries and for distribution to SLRs in other states and regions. The extent to which state-developed curricula are shared with other states is thus related to SLR performance. SLRs are expected to know what is being developed, to monitor its progress, and to obtain

sufficient copies for distribution (although, as discussed in the previous section, states are increasingly limiting printing quantities for economic or other reasons). Some Centers also rely on the SLRs to assist in the task of abstracting for VECM, requesting that abstracts be prepared and submitted to the Center along with new materials developed by the states. This use of SLRs does not appear to be universal, however, and it can place disproportionate demands on individuals depending on the degree to which their states are engaged in curriculum development.

Linkages

One of the Network's charges is to develop linkages with "other organizations or information-sharing systems" (1983 RFP, p. 3) involved in vocational education. While the six Centers have each addressed this charge in different ways, all have developed formal and informal mechanisms for collaborating with other vocational education organizations. Among these organizations are NCRVE, a number of vocational education consortia (particularly those whose mission is to develop curricula), and associations and other organizations with a vocational education or training orientation.

National Center for Research in Vocational Education. The one linkage that cuts across all the Centers is the formal relationship with NCRVE. A staff member at NCRVE, formally designated as liaison with the Network, attends the Network Directors' Council meetings to provide updates on NCRVE

activities and to participate in Network planning of curriculum coordination activities. The liaison and other NCRVE staff assigned to Network-related projects also attend the Network's annual Concurrent Meeting. For example, at the 1984 Concurrent Meeting, the NCRVE liaison made a presentation on the role of the SLR as the primary link between the Network and state-level curriculum development and dissemination initiatives.

NCRVE also taps the Network's system of SLRs to facilitate dissemination of its own products. Recently, for example, the East Central Center helped NCRVE test a marketing notebook intended to be displayed by SLRs at instate workshops and meetings of vocational education personnel. Thus the SLR system, established by the Network to serve as the state entry point for curriculum dissemination, has also become an avenue for NCRVE to reach state and local vocational education personnel with noncurricular products related to program improvement.

In addition to the formal liaison, Network and NCRVE staff routinely collaborate in areas of mutual interest. Staff of the Midwest Center assisted NCRVE in developing the national vocational education dissemination and utilization system that has been in place since 1979. Directors of the regional Centers routinely attend the NCRVE annual Dissemination and Utilization Conference. All of the Centers use NCRVE's assistance in locating materials and provide similar assistance to NCRVE staff. The regional Centers maintain information on the numbers of requests received from NCRVE by the states and Centers and

include documentation of their staff time devoted to "coordinated efforts with NCRVE" in their annual impact reports.

Perhaps the best recent example of collaboration between the two programs is the VECM system, which has been developed and operated with close cooperation between the Network and NCRVE. The idea for VECM originated with the Northeast Center in response to a perceived need for an easily accessible, national repository for information on print and nonprint vocational curriculum materials. It was thought that such a system would substantially improve the regional Centers' capacity to respond to requests for information on available curriculum and instructional materials. The need for such a system was articulated by the Directors' Council and a proposal was submitted to OVAE.

Because of its experience with other vocational education databases (notably ERIC), NCRVE was assigned to conduct a feasibility study and later to implement the system that became VECM. Throughout the process the regional Centers have been actively involved in VECM. The Centers' Directors designed and approved the VECM abstract form and helped to establish criteria for determining what materials should be included in VECM. They have worked with the states in their regions through the SLRs to establish quotas for submission of materials to the system. Typically materials are abstracted by SLRs, sent to the regional Centers for review and correction, and transmitted to NCRVE, where they are entered into the database.

The computerization of the Network is viewed as an important result of the ongoing collaboration with NCRVE. (For example,

the Northeast Center tested the new ADVOCNET, a telecommunications system, under contract with NCRVE.)

Vocational education consortia. Linkages with vocational education consortia have occurred on a Center-by-Center basis rather than across the Network in a formalized way as has been the case with NCRVE. The nature of these linkages has been influenced by the particular foci and interests of the regional Centers and the states they serve. In two instances, a Center's existence motivated the development of a consortium of states. In the Midwest, the relationships developed among the states through the activities of the Midwest Center engendered the establishment of the Mid-America Vocational Curriculum Consortuim (MAVCC), a group of 11 states that collaborates in the development of curriculum and instructional materials using a uniform format initially developed by one of the member states. MAVCC is located in facilities adjoining the Midwest Curriculum Center, and that Center's director serves on the MAVCC Board of Directors. In the Northwest the region's states formed a consortium to develop and share vocational curriculum and instructional materials in energy occupations.

The East Central Center has an arrangement with the Vocational-Technical Education Consortium of States (V-TECS) under which the regional Center has completed a study of alternative models for membership fees that might encourage wider state participation in the consortium. This Center is also involved in a comparative analysis of the V-TECS and Dacum methodologies for task list development. Other Centers also disseminate V-TECS

catalogues, invite the directors of that consortium and others (e.g., The American Association for Vocational Instructional Materials) to participate in their regional meetings, and encourage states in their regions to become active in consortia. The Centers' Directors perceive the curriculum consortia as an important resource for reducing duplication in curriculum development activities and consequently have been active in disseminating and marketing their products.

Associations and other organizations. Perhaps in part because many SLRs also serve as their states' Research Coordinating Unit (RCU) Directors, the Curriculum Centers have developed linkages with the National Research Coordinating Unit Association. The association and the East Central Center held a joint meeting in 1983, at which mutual concerns regarding program improvement were explored, and this Center holds training workshops for new RCU directors. The Northeast Center has worked with the association in identifying curriculum gaps and setting priorities. That Center has also developed a linkage with the American Association of Community and Junior Colleges (AACJC) as part of an effort to market the Center's services to postsecondary vocational education institutions in the region. The Center has provided AACJC with information on the Network's services for inclusion in the association's brochures.

Similarly, the Northwest Center is developing relationships with the Washington Federation of Private Vocational Schools and is attempting to market Network services to employment training programs operated with Jobs Training Partnership Act (JTPA)

funds. The Western Center works with the National Diffusion Network through membership on the Advisory Council of the Hawaii Educational Dissemination and Diffusion System to disseminate exemplary practices. The Midwest Center has a longstanding agreement with the Associated General Contractors of America, under which MAVCC developed and the Midwest Center helped to disseminate competency-based curriculum and instructional materials in construction occupations. Finally, the East Central Center has a nonfinancial agreement with the Northwest Regional Educational Laboratory to evaluate vocational software under the MicroSIFT program. In return, the Center is able to provide software for its clients to preview prior to purchase and can provide copies of any software that is not copyrighted.

According to the Center Directors, these relationships are particularly important in the overall context of the Centers' activities. The Centers are able to assess the needs of the states in their regions and then contact the organizations that have resources to meet those needs. Through the avenue of the regional meetings, the Centers can bring information and services (e.g., technical assistance) to the states by inviting speakers, presenting materials, etc. This strategy is cost efficient in that representatives of organizations can attend one regional meeting and reach a larger number of states than they could otherwise afford to visit. Thus in effect the Center serves as the link between resource organizations and the states, with states and the Centers identifying needs and the Centers arranging for information (print, speakers, etc.) to be provided to meet those needs.

CHAPTER FOUR

DESIGN OF A USER STUDY

In designing an assessment of the Network, one needs to make a distinction between the Network and the federally supported program. While the Network comprises the Directors' Council, six regional Centers, and 57 SLRs, the federal program--defined as what the federal funds pay for--is limited to the Directors' Council, partial support for the six Centers, and travel expenses for the SLRs to an annual meeting and one or more regional meetings, depending on the specifications of each Center's contract. This distinction is important because while the SLRs are a fundamental component of the Network, at the same time they are the major users, or facilitators, of the services and activities supported under the federal program and should be a major focus of a user impact study. The nature and extent of activities targeted to the SLRs should be studied because a major thrust of the regional Centers' activities over the past twelve years has been to address OVAE's program goals through the creation and maintenance of a network of state-level vocational education professionals with the capacity to influence curriculum development and dissemination. Of particular importance are the capacity-building activities and services that have been provided to SLRs and through SLRs to the states (e.g., assistance to states in establishing curriculum centers).

Factors Influencing the Network's Impact

A number of factors can be expected to influence the Network's impact on this category of users. One is the quasi-voluntary nature of the program at the state level. That is, the Center Directors have no control over who is appointed as SLRs within their regions (or even whether state directors choose to appoint SLRs and support the concept through release time to attend meetings, etc.). Most of the Directors have indicated that factors such as organizational location and other responsibilities of the SLRs within state vocational education systems have an important influence on their activities and effectiveness. It should be noted that none of the SLRs devotes full time to SLR activities; thus an SLR's commitment to the Network can be a critical factor in effectiveness. Another important factor is level of commitment to the Network concept by state directors of vocational education. For this reason the marketing effectiveness of the Directors is often a key to effective liaisons with state departments and to the impacts of Network services.

A second factor relevant to Network impacts on curriculum development and management at the state level is state policy and practice concerning vocational education curriculum. Substantial variability exists in this regard. Some states require that all curriculum be developed by local vocational education teachers. Some have curriculum labs that develop most or all of the curriculum and instructional materials used in the state; others do not develop curriculum but rather purchase it from other

states or commercial firms. Thus the Centers have had to tailor their capacity building, dissemination, and outreach activities to state systems' organizational structure, emphasis on curriculum development, and willingness either to adopt or to adapt curriculum materials.

A third factor that influences the impact of the Centers on their states is Center or state policies or practice regarding access to Network services. Some states have established a policy whereby all requests for curriculum information and materials are funneled through the SLR. In such states local vocational educators identify the SLR rather than the Network as their major information resource, and consequently many have limited awareness of their regional Center or of the Network. In other states local teachers and administrators access the Network directly, with the regional Centers identifying local clients as a major part of their client base and targeting outreach activities at both the state and local levels. Thus the extent to which Network impacts can be measured beyond the state level depends on state-determined and Center-established procedures for receipt of requests and dissemination of information to meet local needs.

A final factor that influences the Network's impact on state-level curriculum activities is the dual role of the SLRs as they relate to the Network. In addition to being major recipients of Network services, in most regions they also serve an important policymaking function. The SLRs help to shape the services and activities of the Centers by communicating the needs

of their states at regional meetings, (e.g., indicating occupational areas that require special attention), requesting special types or configurations of activities (e.g., the East Central activities related to microcomputers), and serving as a major provider of curriculum and instructional materials to the Centers and by extension to the Network. Thus the Network's capacity to disseminate curriculum nationally depends on the active involvement of SLRs in both identifying the needs and sharing the resources of their states.

Similarly, relationships between the Centers and various vocational education information-sharing organizations have had a dual thrust. In many instances the linkages established have enabled Centers to serve as a conduit for curriculum-related services into the state and local systems. For example, the Northeast Center has purchased nearly all the V-TECS catalogs and made them available to vocational educators in that region. At the same time, again largely through the vehicle of the SLRs, the information-sharing organizations used the Network to gain access to states, identify needs, and facilitate the spread of materials and other resources.

Development of measures that will be useful in assessing the impact of the Network on its users will require careful attention to the factors described above. Measures and methods to assess Network impacts should focus on the three major categories of services and activities described earlier in this report: (1) capacity building, (2) information resources, and (3) outreach. It should be noted that OVAE's impact reporting requirements have

typically included information in each of these categories, although, because of the numerical orientation of these reporting procedures (e.g., numbers of persons attending workshops, number of requests for assistance by NCRVE), the system has not yielded much information on the central importance of SLRs as service recipients or on the extent of the Network's capacity building activities targeted to SLRs. Further, the linkages established with other organizations involved in sharing information on vocational education curriculum have not been entirely clear.

Strategies for Assessing the Network's Impact

Issues that should be investigated in a user impact study of the Network include the following:

- Capacity building
 - Professional development and career development among SLRs
 - Improved capacity in curriculum development, adoption/adaptation, and management at the state level, with attention to the extent to which this capacity exceeds that which would otherwise exist
 - Impact on state and local capacity of VECM, electronic mail, and other technological developments
- Information resources
 - Utilization of the Network for curriculum related information needs
 - Impacts of the Network's linkages with other information-sharing organizations
 - Spread of curriculum-related developments and improvements (e.g., competency-based vocational education, the Dacum system)

- Outreach

- Nature and extent of activities
- Centers' measurement of client use and satisfaction
- Extension of the Network's client base
- Changes in profile of service recipients (e.g., increases over time in postsecondary clients)

Methods for assessing the impacts of the Network could include the following.

Analysis of available information. The Center and Network annual impact reports are an important repository of information on the nature and relative emphases of Center services, particularly in the areas of information dissemination and outreach activities. These reports can provide quantitative data on the activities of the Centers and the Network generally. In connection with this task, discussions with OVAE officials and Center Directors would focus on the methods currently used for enumerating services and activities in these areas. In some cases it may be important to recategorize this information based on region- and state-specific factors that influence the nature and extent of reported activities. Among the issues to be explored in this task would be methods used to calculate cost savings attributed to Network activities.

Case studies of the Centers. Case studies of the Centers can focus on the states as the primary clients of the Centers, with particular attention to state and regional factors that have influenced the models of service delivery that each Center has developed (e.g., variations regarding direct service delivery to

local teachers and administrators). In this regard the role of the Directors' Council would be investigated to determine its impact on the way the Network has evolved. Site visits to three centers can be supplemented by telephone interviews with staff at Centers visited during the descriptive study to ensure uniform information across the Centers. One of the major issues to be addressed would be the Network's role in improving the quality of vocational education curriculum.

Telephone interviews. To obtain information on the Network's impacts on state and local users, telephone interviews can be conducted. The chief purposes of such interviews would be to identify the factors that determine the extent to which the Network's resources are used and the impacts of such use on state and local curriculum activities. A major focus would be the Network's impact on building the capacity of states in curriculum through the SLR system. Interviews can be tailored to individual respondents on the basis of available information about state-level characteristics and specific interactions with the Centers. Analysis of the information gathered from such interviews can permit generalizations about the operations and effects of the Network, although particular questions would not be asked of more than nine respondents.

Site visits to other organizations. The extent to which the Network has become an integral component of the nation's dissemination and improvement system for vocational education can be investigated through site visits or telephone calls to selected

information-sharing organizations (e.g., V-TECS, NCRVE). This activity would permit investigation of the influence such linkages have had on the flow of program and curriculum improvement information to state and local users.

Summary

A user impact study would focus on the extent to which the Network's activities have resulted in both intended and unintended outcomes. Particular focus should be placed on the Network's impacts on state curriculum activities through the services provided to SLRs, with attention to the influence various information flow patterns have in transporting materials to state and local vocational educators. In this regard a major thrust of the study would be the capacity-building activities of the Centers in regard to the SLRs. The study would explore alternative configurations of service delivery and various options for improvement of the program. A chief concern would be the Network's role in OVAE's program improvement system. Additionally, such a study would permit an analysis of state factors that have helped to shape the Network's activities and effectiveness over time as well as development of inferences concerning the Network's role in the context of other vocational education information-sharing organizations.

APPENDIX: PROFILES OF THE SIX CENTERS

East Central Network for Curriculum Coordination

The East Central Network for Curriculum Coordination (ECN) is housed with the Illinois Vocational Curriculum Center (IVCC) on the campus of Sangamon State University in Springfield, Illinois. The Center's sponsor is the Illinois State Department of Vocational Education, which leases the facility in which the Center is housed, and which provides approximately half of the Center's funding. Project staff include the Director, who has been with the Center since its inception and has served as Director since 1976; a full-time coordinator; a half-time secretary; and a half-time assistant. Other staff who work on Center activities but are supported by state funds include a micro-computer specialist and a librarian. State funds also cover printing and other support for the Center.

The Center's staff provide services in a twelve-state area that parallels ED regions III and V. The states covered are Michigan, Illinois, Minnesota, Wisconsin, Indiana, Ohio, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, and Washington, D.C. Several of these states (e.g., Michigan, Maryland, and West Virginia) are major curriculum developers, while others are primarily purchasers (e.g., Delaware). Respondents from both types of states commented on the utility of the Center's services in facilitating curriculum development, adoption, and adaptation activities. Additionally, this region has

developed a common format for curriculum that is thought to have increased the transportability of curricula among the states.

In addition to the capacity building, information resource, and outreach services performed by all the Centers, the ECN has in recent years become actively involved in other endeavors as well. One example of the Center's initiatives has been the development of a linkage with Holland College and the Canadian Government. Holland College is a vocational education institution on Prince Edward Island that has been a major proponent of the Dacum system for development of competency-based curriculum. The college became aware of ECN during a curriculum search and is currently attempting to replicate the Center and the Network in Canada. In return for ECN's assistance in this effort, Holland College has provided Dacum facilitator training to ECN staff, who are now available to provide training to SLRs in their region and to the other regional Centers. Additionally, the Canadian system is sharing curriculum developed in that country, particularly that available in energy conservation fields. Thus this activity is extending the Network concept beyond the United States, with this nation's vocational education system obtaining materials and services from Canada in return.

Midwest Curriculum Coordination Center

The Midwest Curriculum Coordination Center is operated by the Oklahoma Curriculum and Instructional Materials Center (CIMC) at the Oklahoma State Department of Vocational and Technical Education. CIMC is a state-funded curriculum laboratory that

develops and disseminates instructional materials for all areas of vocational education. Its materials are developed primarily for use throughout the state of Oklahoma, although it also sells more than \$2 million of curriculum materials outside Oklahoma annually. Oklahoma was one of the first states to invest heavily in curriculum development and still is considered one of the largest developers of curriculum. CIMC has a staff of over 35 full-time personnel.

The Midwest Center was one of the original federal grantees under this program. Since 1972 the Center has had two directors. The First Director, who was Coordinator of CIMC and a long-time advocate of collaborative efforts among states to develop and disseminate curriculum materials, directed the Center from its inception to his death in 1976. The second Director of the Midwest Center is also Coordinator of the CIMC. Additionally, he served for a period of time as the Oklahoma SLR and currently chairs the Network Directors' Council.

Center funds received from the federal government, which total slightly over \$100,000 per year, provide partial funding for the six staff members, including 30 percent of the Director's salary. The Center has a half-time Assistant Director, who also serves as the Oklahoma SLR and as one of three Assistant Coordinators for CIMC. Federal funds also support part of the salaries of an administrative secretary (50 percent), a dissemination and acquisitions clerk (20 percent), a librarian (25 percent), and a warehouse clerk (15 percent). Each of these part-time Center staff members spends the other portion of his/her

time on CIMC activities. For instance, the librarian maintains an extensive library for the curriculum specialists employed at CIMC, which also loans materials to individuals within and outside Oklahoma. She also performs searches for SLRs and others requesting assistance from the Center. Oklahoma's in-kind contributions to the Center, exclusive of warehouse facilities, office space, and the Director's time, total about 35 to 40 percent of the Center's combined resources.

The Midwest Center, in addition to disseminating materials, is also very active in providing technical assistance to the SLRs in the region and, at the request of individual SLRs, to other groups such as teachers or administrators within the states. The Director and Assistant Director put a great deal of emphasis on the professional development of the SLRs and have developed an SLR training course, which is conducted for new SLRs annually at the Concurrent Meeting. In addition, at the start of each project year, the Director asks SLRs to assess their needs for technical assistance workshops in their states and then turn in their requests so that he can plan his schedule for the year. Center staff have organized and conducted workshops on many topics, including sex equity, the development of competency-based instructional systems, microcomputers in home economics, and guidelines for establishing state curriculum resource centers. The four Midwest SLRs interviewed for this study were unanimous in their endorsement of the Center's technical assistance services.

Although several of the nine states in the Midwest region are curriculum-developing states--especially Oklahoma, Texas, Louisiana, and Missouri--the others do not invest heavily in curriculum development. In 1975, as a result of the associations cultivated among states in the region by the Midwest Center, the Mid-America Vocational Curriculum Consortium (MAVCC) was formed. Each state pays a membership fee, which is used to develop curriculum materials needed in the region. The MAVCC Board of Directors includes the Center Director and the SLRs from each member state. MAVCC is located next to the Oklahoma CIMC.

Northeast Network for Curriculum Coordination

In 1983 the New Jersey State Department of Education reorganized vocational education resources and projects to combine them under the aegis of the New Jersey Vocational Education Resources Center. The Northeast Network for Curriculum Coordination (NENCC) is thus now joined with the state's curriculum laboratory and resource center. The Center Director reports that she was instrumental in this reorganization, which has improved access due to the centralization of curriculum services, instructional materials, and staff resources. The New Jersey State Department of Education and Rutgers University maintain overall responsibility for NENCC. Funds for the Center are disbursed through Rutgers' Department of Vocational Technical Education and Research Contracts Office.

New Jersey's inkind contributions to the Center are estimated at 30 percent of NENCC's annual budget. The state pays for

the Director's salary; bookkeeper, clerical, media specialist, and reference librarian services; office space, heat, lighting, and office supplies; and roughly half of the other direct costs incurred by the Center.

The current Director has held this position for the past year, having been Assistant Director as well as the New Jersey SLR for the preceding two years. She is contractually committed to spend 30 percent of her time on Center activities but reports that in actuality the time spent is greater. The Center Director is assisted by two full-time professionals who perform search, cataloging, and information dissemination functions and a clerk dedicated 60 percent to the Center.

The Northeast Network for Curriculum Coordination encompasses eight states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont), Puerto Rico, and the Virgin Islands. The eight states are all reported to be active Network participants, with Puerto Rico and the Virgin Islands less so although this appears to be changing. Three of this region's states are heavily engaged in curriculum development and are expected to continue to be. The remaining states, which are either very small or in financial difficulty, are unable to dedicate significant resources to education in general and tend to concentrate on curriculum adaptation to avoid development costs.

Over the years the objectives of the NENCC have remained unchanged and are the same as those stated for the National Network. However, the activities and services have evolved in

response to changing regional and federal priorities. The Northeast Center currently provides 14 services. Among its major services are distribution of free copies of microfiche curriculum materials in its collection and computer searches. Requests for computer searches have increased 50 percent in the last year alone, and requests for reprints of these searches have also increased. In response to user demand, the Center is compiling task lists for all vocational areas. The NENCC has historically involved itself in special projects under the Network contract and other funding mechanisms. Most recently it participated in a field test of ADVOCNET sponsored by OVAE and NCRVE.

The Center has reduced its technical assistance services due to elimination of funds for this purpose. However, it continues to assist states by providing materials to SLRs' planning conferences and by locating consultants for states to engage independently.

Northwestern Vocational Curriculum Management Center

Located in Olympia, Washington, the Northwestern Vocational Curriculum Management Center (NWVCMC) is one of two organizational units of the Washington State Commission for Vocational Education. The Commission is independent of the two state agencies that have operational responsibility for vocational technical education at the secondary and postsecondary levels. Originally organized as an administrative mechanism to handle federal funds, it has, on occasion, been the target of attempted reorganizations within the state structure. The Commission

provides services to the Center such as accounting, funds administration, and subcontract administration free of charge. Other services such as facilities, heat, rent, and copying are provided on a cost-reimbursable basis. The Commission has provided funds to the Center to allow it to undertake activities not covered by federal funds (e.g., printing costs for the NWVCMC catalogue). The Center also provides a mailing service to the Superintendent of Public Instruction and the State Board for Community Colleges for curriculum materials they have developed which are requested by clients.

NWVCMC has had four Directors (three directors and a part-time Director) since it was founded in 1972. The current Director assumed his position in January 1984, replacing a Director transferred by the Commission during a state reorganization. The new Director was a member of the Northwestern Center's staff during its early years of operation, then spent nine years in the state planning office, where he had responsibility for auditing and compliance.

The Northwestern Center has a permanent staff of three. The Center Director's position is full time and 100 percent federally funded. One clerk typist and administrative assistant work full time for the Center, with 100 percent of their salaries charged to the contract. During 1984 the Commission assigned a clerk typist to the Center to help reduce a backlog in cataloging and abstracting activities.

Since 1974 ten states have been part of the Northwestern Center's region. The geographically large, sparsely populated

states of Alaska, Colorado, Idaho, Montana, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming account for 40 percent of the nation's land mass but only seven percent of the population. States in the region tend to rely heavily on others for curriculum development and do not themselves engage in development. States that joined the Northwestern region in 1974 are members of MAVCC and are reported to maintain continuing ties with the Midwest Center. The Northwestern Center has found that the states most distant from Olympia tend to use the Center the least. The Director's personal goal is to increase service to all states by 25 percent by the close of 1984.

The Center's activities and priorities have remained the same since its inception. Some of the major activities have been the following:

- The adaptation model and a self-instructional series on vocational curriculum development, released in 1976, were intended to establish a basic, standard procedure for curriculum development within the region.
- Meetings of SLRs provide a forum, and the communique a process, for identifying and making available information about curriculum development in progress.

The Center's lending library, physical and computer searches, and the catalog's data are the primary services provided at this time. The Center also sponsors technical assistance to member states on a subcontract basis. The new Director's plans for the Center include a reevaluation of objectives and design of a plan for meeting them that will not change the Center's focus on service to the states.

Southeast Curriculum Coordination Network

The Southeast Curriculum Coordination Network (SCCN) is operated by the Research and Curriculum Unit (RCU) on the campus of Mississippi State University, which conducts and coordinates research in vocational education and develops curriculum materials for use in Mississippi. The RCU is sponsored by Mississippi State University and the Division of Vocational and Technical Education of the Mississippi State Department of Education. The RCU contributes administrative services, typesetting, printing services, equipment, microcomputers, and office and library space to SCCN. In addition, because the Center is located within the university, it is able to draw on part-time student help when needed.

The Mississippi RCU was one of the original five grantees of the Network program. For many years the Center Director was also the Director of the RCU. The current SCCN Director, who has held the position for five years, spends approximately 50 percent of his time on SCCN activities; the other 50 percent is devoted to his positions as Coordinator of one of the four RCU program areas and as Professor at MSU. In addition to the Director, SCCN, which operates on a budget of just under \$89,000, employs a full-time librarian and a 75 percent time assistant librarian.

According to the Center's Director, the mission of SCCN is the same today as it was when its doors opened--i.e., to share curriculum information, to help eliminate duplication of effort, and to provide assistance to vocational-technical personnel by responding to their curriculum needs. Those objectives are

particularly important for the Southeast region because so many of the states in the region are dependent on other states for curriculum materials.

SCCN maintains a lending library housing most of the curriculum materials developed by states within the region; performs state, regional, and national searches at the request of SLRs and other vocational-technical personnel in the region; develops a regional communique for distribution throughout the region; and conducts two regional meetings per year. At these meetings, SLRs report on curriculum activities in their states, with particular emphasis on newly developed materials. These meetings also include inservice training and technical assistance for SLRs.

Western Curriculum Coordination Center

The Western Curriculum Coordination Center is located at the University of Hawaii at Manoa in the College of Education, where the Center's Director is a Professor of Education with a doctorate in vocational education. The Center has been located in Hawaii since January 1977, when the contract formerly held by California was awarded to the University of Hawaii. The Center's region encompasses American Samoa, Arizona, California, Guam, Hawaii, Nevada, Trust Territory of the Pacific Islands, and Commonwealth of the Northern Marianas. The large distances and disparate time zones within the region, in addition to vast differences in population size, characteristics, industrial profiles, etc., make the Center's services and activities unlike those of other regions. For example, some conferences are held

by satellite, and technical assistance often occurs when SLRs stop off in Hawaii on their way to the mainland. Further, most of the areas in the region have population and resource constraints that require vocational educators to fill numerous roles: most of the SLRs are also state directors, some are RCU directors, and some are both. For this reason this Center has encouraged its states to appoint assistant SLRs to perform some of the day-to-day functions that the state directors may not have time for. Additionally, many of the territories and states make cash or other contributions to the Center to help meet its high travel and communication expenses.

In addition to the Director, the Western Center is staffed with a coordinator, a librarian, and an information/acquisitions specialist. The University contributes the time of student research and library assistants on an as-needed basis. The federal contract has covered 50 percent of the Director's time, 100 percent of the coordinator's and librarian's time, and 75 percent of the information/acquisitions specialist's time, although the Director indicated a recent reduction in this support.

The Center houses a library of loan materials that it distributes to states in the region on request. The Center is currently computerizing its holdings to facilitate communication throughout the region. The Center, as well as some of the mainland states, routinely performs Network searches upon request. Regional meetings focus on SLR professional development as well as Center business and state curriculum activities. At the July 1984 regional meeting, for example, the Center arranged a

presentation by B. F. Skinner. According to the Center's Director, the Center's activities over the years have been tailored to the unique features of the region. The demography of the region has meant that particular attention has had to be paid to communication and dissemination strategies.

Among the major activities reported by the Center are the following:

- Maintenance of linkages with other information-sharing systems (e.g., National Diffusion Network, NCRVE, NRCUA) to facilitate dissemination of information on vocational curriculum and materials to states throughout the region
- Participation in VECM
- Provision of technical assistance and capacity building services (e.g., development of a handbook for the Western region SLRs)
- Conduct of Network searches (1,550 in 1983)
- Production and dissemination of Regional Communiques
- Participation in Network meetings and other activities as specified in the contract.